What is claimed is:

1. A multi-mode wireless device on a single substrate, comprising:

   an analog portion integrated on the substrate, including:

   a cellular radio core;

5   a radio sniffer coupled to the cellular core; and

   a short-range wireless transceiver core coupled to the cellular core;

   and

   a digital portion integrated on the substrate, including:

   a reconfigurable processor core coupled to the cellular radio core

10   and the short-range wireless transceiver core, the reconfigurable processor

   adapted to handle a plurality of wireless communication protocols; and

   a high-density memory array core coupled to the reconfigurable

   multi-processor core.

15   2. The wireless device on a single substrate of claim 1, wherein the protocol conforms to

   a Bluetooth™ or IEEE802.11 protocol.

3. The wireless device on a single substrate of claim 1, wherein the protocol software

   conforms to a Global System for Mobile Communications (GSM) protocol.

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4. The wireless device on a single substrate of claim 1, wherein the protocol software

   conforms to a General Packet Radio Service (GPRS) protocol.

5. The wireless device on a single silicon substrate of claim 1, wherein the protocol software conforms to an Enhanced Data Rates for GSM Evolution (Edge) protocol.

6. The wireless device on a single substrate of claim 1, wherein the reconfigurable processor core includes one or more digital signal processors (DSPs).

7. The wireless device on a single substrate of claim 1, wherein the reconfigurable processor core includes one or more reduced instruction set computer (RISC) processors.

8. The wireless device on a single substrate of claim 1, further comprising a router coupled to the processor, the cellular radio core, and the short-range wireless transceiver core.

9. The wireless device on a single substrate of claim 8, wherein the router further comprises an engine that tracks the destinations of packets and send them in parallel through a plurality of separate pathways.

10. The wireless device on a single substrate of claim 8, wherein the router sends packets in parallel through a primary and a secondary communication channel.

11. A portable computer system, comprising:

    a processor;

an input recognizer embodied in said program storage device, said input

recognizer adapted to receive input from said user;

a multi-mode wireless device on a single substrate coupled to the processor, the

device comprising:

5   an analog portion integrated on the substrate, including:

a cellular radio core; and

a short-range wireless transceiver core; and

a digital portion integrated on the substrate, including:

a reconfigurable processor core coupled to the cellular radio core

10   and the short-range wireless transceiver core, the reconfigurable processor

adapted to handle a plurality of wireless communication protocols; and

a high-density memory array core coupled to the reconfigurable

multi-processor core;

a program storage device coupled to said processor; and

15   a computer readable code embodied in said program storage device and coupled

to said input recognizer for receiving said user input.

12. The portable computer system of claim 11, wherein the protocol conforms to a

Bluetooth™ protocol.

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13. The portable computer system of claim 11, wherein the protocol software

conforms to a Global System for Mobile Communications (GSM) protocol.

14. The portable computer system of claim 11, wherein the protocol software conforms to a General Packet Radio Service (GPRS) protocol.

15. The portable computer system of claim 11, wherein the protocol software conforms to an Enhance Data Rates for GSM Evolution (Edge) protocol.

16. The portable computer system of claim 11, wherein the reconfigurable processor core includes one or more digital signal processors (DSPs).

17. The portable computer system of claim 11, wherein the reconfigurable processor core includes one or more reduced instruction set computer (RISC) processors.

18. The portable computer system of claim 11, further comprising a router coupled to the processor, the cellular radio core, and the short-range wireless transceiver core.

19. The portable computer system of claim 18, wherein the router further comprises an engine that tracks the destinations of packets and send them in parallel through a plurality of separate pathways.

20. The portable computer system of claim 18, wherein the router sends packets in parallel through a primary and a secondary communication channel.